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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
REFAI, RAMSEY	

ART UNIT	PAPER NUMBER
3627	

MAIL DATE	DELIVERY MODE
10/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/811,158	SREENIVASAN ET AL.	
	Examiner	Art Unit	
	Ramsey Refai	3627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *04/02/07,07/12/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Responsive to claims filed July 25, 2007 and Remarks filed April 02, 2007. Claims 1-3 have been amended. Claims 1-17 remain pending.

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on April 02, 2007 is being considered by the examiner. The information disclosure statement (IDS) filed July 12, 2007 contains portions that have not been considered. The IDS includes copies of Office Actions, which are unsuitable as Non-Patent Literature. If the Applicant' s believes that the prior art references noted in those Office Actions are relevant to the pending application, then those references should be properly listed in the IDS in accordance with MPEP ch 609 and 37 CFR 1.97.

Response to Arguments

2. Applicant's arguments filed April 2, 2007 have been fully considered but they are not persuasive.

Applicant is reminded that claims must be given their broadest reasonable interpretation consistent with the specification (MPEP ch. 2111) and that a prior art reference must be considered in its entirety (MPEP ch. 2142.02).

- In the remarks, the Applicant argues in substance:

Argument: *" Applicant notes that a heartbeat message is different from the proposal and commit messages recited in the Applicant' s claims··· Thus it is clear from Frank that a single type message, a heartbeat message is used to determine that a node is still in a*

network cluster. This is unlike the Applicant' s claims, which recite two message types, a proposal message and a commit message that are used to establish a group membership".

In response, the Examiner respectfully disagrees. In the remarks, the Applicant has discussed what a heartbeat message is as stated in Frank, but has failed to discuss what a proposal message is and how a proposal message is different from a heartbeat message. The Applicant has also argued that Frank only discloses a single type message, a heartbeat message and not two message types as claimed. However, as admitted by the Applicant on Page 8 of the remarks, Frank also teaches a second message referred to as a cluster reconfiguration message. Frank meets the scope of the claimed limitation of *utilizing a proposal message and a commit message* in column 5, lines 44-62 and column 2, lines 5-13, which teach the sending of a heartbeat message (proposal message) to nodes. If a node fails to receive a heartbeat message from a previous node, a reconfiguration message (commit message) is then sent by the node to all other nodes. Once all other nodes acknowledge the nodes in the group, the node membership is once again reconciled. Therefore Frank meets the scope of the claimed limitations.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Frank et al (U.S. Patent No. 6,532,494).

5. As per claim 1, Frank et al teach a computing system comprising a plurality of nodes connected by a network wherein the plurality of nodes include a group membership service (column 1, lines 30-45, Fig 3, Fig 1; nodes in a cluster group) operable to determine membership in a group formed by the plurality of nodes of a process executing on a node in the plurality of nodes for an application distributed across two or more of the plurality of nodes said membership communicated between the plurality of nodes in the network (column 4, lines 49-67; distributed application) utilizing a proposal message sent by a coordinator node for receipt by each node in the plurality of nodes and a commit message sent by the coordinator node to each node in the plurality of nodes after receiving acknowledgement that the proposal message has reached each node of the plurality of nodes (column 5, lines 44-62, column 2, lines 5-13; if a node fails to receives heartbeat messages from its previous node, a reconfiguration message is then send by that node to all other nodes; once all other nodes acknowledge their existence in the group, the node membership is once again reconciled), and further wherein the plurality of nodes communicate with each other to detect as failure on a first node of the plurality of nodes and to transfer applications from the first node to other nodes of the plurality of nodes in the group on detecting the failure (column 1, lines 30-40, column 2, lines 5-13; failover).

6. As per claims 2 and 3, these claims contain similar limitations as claim 1 above, therefore are rejected under the same rationale.

7. As per claim 4, Frank et al teach wherein the plurality of nodes includes an initiator node to send the proposal message to the coordinator node (column 5, lines 44-62; no ack to heartbeat message sent by the node is received from failed node).

8. As per claim 5, Frank et al teach wherein the coordinator node comprises a longest running node in the plurality of nodes (column 7, lines 21-27).

9. As per claim 6, Frank et al teach wherein the plurality of nodes are arranged in a network ring, the order of the plurality of nodes in the network ring being defined by a cluster membership age of each node in the plurality of nodes and wherein the coordinator node forwards the proposal message to a first node of the plurality of nodes, and wherein the proposal message is forwarded by a receiving node in the network ring to a successor node of the receiving node (Fig 3, column 5, lines 31-43; message are sent in a loop from a previous node to a next node).

10. As per claim 7, Frank et al teach wherein the coordinator node issues the commit message upon receiving the proposal message from a non-initiator node in the network ring (column 5, lines 44-62, column 2, lines 5-13; once other nodes verify group membership by exchange of messages; group membership is reconciled).

11. As per claim 8, Frank et al teach wherein communicating the proposal message includes sending by an initiator node the proposal message to the coordinator node (column 5, lines 44-62; no ack to heartbeat message is received from failed node).

12. As per claim 9, Frank et al teach wherein the coordinator node comprises a longest running node in the plurality of nodes (column 7, lines 21-27).

13. As per claim 10, Frank et al teach, further comprising:

arranging the plurality of nodes in a network ring; forwarding by the coordinator node the proposal message to a first node of the plurality of nodes; and forwarding by the first node to a next node in the network ring (Fig 3, column 5, lines 31-43; message are sent in a loop from a previous node to a next node).

14. As per claim 11, Frank et al teach wherein the coordinator node issues the commit message upon receiving the proposal message from a non-initiator node in the ring (column 5,

lines 44-62, column 2, lines 5-13; once other nodes verify group membership by exchange of messages; group membership is reconciled).

15. As per claim 12, Frank et al teach wherein upon receiving the commit message a node of the plurality of nodes in the network ring performs the tasks of caching the commit message; forwarding the commit message to a next node in the network ring; upon completing forwarding the commit message delivering the commit message to each process of a process group on the node (Fig 3, column 5, lines 31-43; message are sent in a loop from a previous node to a next node. The use of caching is well known when communicating data to another node).

16. As per claim 13, Frank et al teach wherein communicating the proposal message includes sending by an initiator node the proposal message to the coordinator node (column 5, lines 44-62; no ack to heartbeat message is received from failed node).

17. As per claim 14, Frank et al teach wherein the coordinator node comprises a longest running node in the plurality of nodes (column 7, lines 21-27).

18. As per claim 15, Frank et al teach wherein the method further comprises:

arranging the plurality of nodes in a network ring; forwarding by the coordinator node the proposal message to a first node of the plurality of nodes; and forwarding by the first node to a next node in the network ring (Fig 3, column 5, lines 31-43).

19. As per claim 16, Frank et al teach wherein the coordinator node issues the commit message upon receiving the proposal message from a non-initiator node in the ring (column 5, lines 44-62, column 2, lines 5-13; once other nodes verify group membership by exchange of messages; group membership is reconciled).

20. As per claim 17, Frank et al teach wherein upon receiving the commit message a node of the plurality of nodes in the network ring performs the tasks of:

caching the commit message; forwarding the commit message to a next node in the network ring; upon forwarding the commit message delivering the commit message to each process of a process group on the node (Fig 3, column 5, lines 31-43; message are sent in a loop from a previous node to a next node. The use of caching is well known when communicating data to another node).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Refai whose telephone number is (571) 272-3975. The examiner can normally be reached on M-F 8:30 - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner' s supervisor, Ryan Zeender can be reached on (571) 272-6790. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ramsey Refai
Examiner
Art Unit 3627
October 2, 2007

10/7/07
F. RYAN ZEENDER
SUPERVISORY PATENT EXAMINER